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MORRISON & FOERSTER LLP 755 PAGE MILL RD PALO ALTO, CA 94304-1018			EXAMINER CONNELLY CUSHWA, MICHELLE R	
			ART UNIT	PAPER NUMBER
			2874	

DATE MAILED: 04/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/904,163

Applicant(s)

FONTECHA ET AL.

Examiner

Michelle R. Connelly-Cushwa

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM
THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,4,10-16,19-25 and 28-39 is/are rejected.
- 7) ☒ Claim(s) 5-9,17,18,26 and 27 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2002 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 24, 2004 has been entered.

Response to Amendment

Applicant's Amendment filed March 24, 2004 has been fully considered and entered.

The indicated allowability of claims 12-14, 20, 21, 30, 31 and 34-36 is withdrawn in view of the newly discovered reference(s) to Swirhun et al. (US 5,631,988) and Trezza (US 6,447,174 B1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 3, 4, 10, 12, 19, 22, 24, 25, 30, 37 and 38 are rejected under 35 U.S.C. 102(b) as being anticipated by Swirhun et al. (US 5,631,988).

Regarding claims 1, 24 and 25; Figures 2a, 2b and 3 of Swirhun et al. disclose an optical package (see Figure 3) having a length of optical fibers (135) connected to the package and a method of routing a length of optical fibers through a wall of the package, comprising:

- an enclosure (see Figure 3) comprising a mounting base (dielectric substrate, 90) which defines a plane and having at least one optical component (linear optoelectronic device array, 110) disposed therein, the component defining a plane and being optically connected to the length of fibers (135, see Figure 2a); and
- an opening defined by at least one wall of the enclosure (see Figure 2);
- wherein a segment of the length of optical fibers (135) is disposed within the opening such that a plane defined by the segment is substantially perpendicular to the plane defined by the mounting base (90);
- wherein the optical fibers are routed through an opening defined in a wall of the package and secured to the package.

Regarding claims 3 and 37; the plane defined by the segment (135) is perpendicular to the plane defined by the component (110).

Regarding claims 4 and 30; the package further includes a support/reinforcement plate (holder, 125) attached to the enclosure and configured to support the segment of

the length, wherein the segment of the length is attached to the reinforcement plate/support prior to routing the length of optical fibers through the opening.

Regarding claim 10; the package further comprises a feedthrough (the hole in holder, 125, for receiving the optical fibers, 135) disposed within the opening and supporting the segment of the length.

Regarding claim 12; Figure 3 of Swirhun et al. further illustrates a protective boot disposed over the feedthrough.

Regarding claim 19; the segment of length of optical fibers (135) is disposed within the opening such that a non-bending length of the optical fibers exterior to the opening is minimized.

Regarding claims 22 and 38; the optical fibers (135) have a cross-section selected from the group consisting of ovals, ellipses and rectangles.

Claims 1, 3, 15, 16, 19, 22-25, 28, 29 and 37-39 are rejected under 35 U.S.C. 102(e) as being anticipated by Trezza (US 6,447,174 B1).

Regarding claims 1, 24 and 25; Figure 1 of Trezza discloses an optical package having a length of optical fibers (12) connected to the package and a method of routing a length of optical fibers through a wall of a package, the package comprising:

- an enclosure comprising a mounting base (substrate, 16) which defines a plane and having at least one optical component (an array of opto-electronic conversion elements, 20) defining a plane and being optically connected to the length of optical fibers (12); and
- an opening (22) defined by at least one wall (50) of the enclosure;

- wherein a segment of the length of optical fibers (12) is disposed within the opening such that a plane defined by the segment is substantially perpendicular to the plane defined by the mounting base (16); and
- wherein the fibers are routed through the opening (22) and secured to the package.

Regarding claims 3 and 37; the plane defined by the segment is perpendicular to the plane defined by the component (the array of elements, 20).

Regarding claims 15, 16, 28 and 29; a sealant (epoxy standoff, 24) is disposed within a gap defined by the opening and the segment of the length, wherein the sealant comprises epoxy.

Regarding claim 19; the segment of the length of optical fibers (12) is disposed within the opening such that a non-bending length of the optical fibers exterior to the opening may be minimized.

Regarding claims 22 and 38; the length of optical fibers has a cross-section selected from the group consisting of ovals, ellipses and rectangles.

Regarding claims 23 and 39; the length of optical fibers (12) comprises a ribbon of optical fibers.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 11, 13, 14, 20, 21 and 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Swirhun et al. (US 5,631,988).

Regarding claims 11 and 31; Swirhun et al. discloses all of the limitations of claims 11 and 31 as applied above, except for specifically stating that the feedthrough is comprised of a material selected from the group consisting of aluminum, aluminum alloys, other metals, Kovar, Invar and Alloy 42. Swirhun et al. does not teach or suggest that the support(125)/connector (150) is made from any specific materials, thereby suggesting a lack of criticality in the particular material used to form the connector and to thereby form the feedthrough in the invention of Swirhun et al. Thus, one of ordinary skill in the art would have found it obvious to form the support/connector, and thereby form the feedthrough, from any well known materials that are commonly used to form supports/connectors in the art, including aluminum, aluminum alloys, other metals, Kovar, Invar and Alloy 42, since it appears that the invention would perform equally well regardless of the specific material used to form the connector and feedthrough, and these materials are commonly used and readily available in the art.

Regarding claims 13 and 14; Swirhun et al. discloses all of the limitations of claims 13 and 14 as applied above, except for specifically stating that the protective boot is comprised of a polymer selected from the group consisting of thermoset or thermoplastic polymers; or that the protective boot is comprised of a polymer selected from the group consisting of santoprene, neoprene, and ethylene propylene diene monomer. Swirhun et al. does not teach or suggest that the protective boot is made

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from any specific materials, thereby suggesting a lack of criticality in the particular material used to form the protective boot in the invention of Swirhun et al. Thus, one of ordinary skill in the art would have found it obvious to form the protective boot from any well known and commonly used materials, including thermoset or thermoplastic polymers, santoprene, neoprene, or ethylene propylene diene monomer, since it appears that the invention would perform equally well regardless of the particular material used to form the protective boot.

Regarding claims 20, 21 and 34-36; Swirhun et al. discloses all of the limitations of these claims as applied above, except for bending a portion of the length of optical fibers exterior to the opening such that the portion of the length between the bent portion and the opening is minimized; and except for specifically stating that a bending radius of the length of optical fibers exterior to the opening is about 1.0 inch, or that the non-bending length of optical fibers exterior to the opening is about 1.0 inch.

Swirhun et al. does not teach that the bending radius of the length of optical fibers exterior to the opening is any specific value, in fact, Swirhun et al. does not teach that particular optical fibers are incorporated in the invention. Therefore, one of ordinary skill in the art would have recognized that optical fibers having any minimum bending radius, including a minimum bending radius of about 1.0 inch, could be incorporated in the invention of Swirhun et al. in order to allow the portion of fibers exterior to the package to be positioned in the manner desired without exceeding a minimum bending radius to accommodate additional optical devices or circuits placed in proximity to the package while not damaging the optical fibers. Thus, one of ordinary skill in the art

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would have found it obvious to incorporate any known optical fibers in the invention of Swirhun et al., including optical fibers having a minimum bending radius of 1.0 inch, since it appears that the invention would perform equally well regardless of the specific optical fibers used, since optical fibers having a minimum bending radius of about 1.0 inch are known in the art, and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

Additionally, one of ordinary skill in the art would have found it obvious to have a non-bending portion of the optical fibers exterior to the package be at least the length of the minimum bending radius of the optical fibers used in the invention, including at least 1.0 inch for optical fibers having a minimum bending radius of 1.0 inch, in order to avoid damaging the optical fibers.

Furthermore, one of ordinary skill in the art would have found it obvious to bend the portion of the length of optical fibers exterior to the opening such that the portion of the length between the bent portion and the opening is minimized in order to more compactly fit other optical elements/circuits in a smaller area surrounding the optical package to produce an optical system of reduced size.

Regarding claims 32 and 33; Swirhun et al. discloses all of the limitations of claims 32 and 33 as applied above, except for filling a cavity defined in the feedthrough with an adhesive and curing the adhesive. Optical fiber connectors including feedthroughs that are similar to the connector (150) disclosed by Swirhun et al. commonly secure the optical fibers within the feedthrough by filling the cavity defined by

the feedthrough with an adhesive that is cured in order to retain the fibers in the feedthrough and to hermetically seal the fibers to prevent dust and/or moisture from interfering with the operation of the optical fibers. Thus, one of ordinary skill in the art would have found it obvious to fill the cavity defined by the feedthrough with an adhesive that is cured to retain the fibers in the feedthrough and to prevent dust and moisture from interfering with the operation of the optical fibers as is known in the art.

Allowable Subject Matter

None of the prior art references of record disclose, teach or suggest that the segment of the length of optical fibers is disposed within an opening in a sidewall of the package such that a plane defined by the segment is substantially perpendicular to the plane defined by the mounting base, wherein the mounting base is located on the bottom wall of the package and the sidewall is perpendicular to the bottom wall of the package as shown in Figures 6A and 6B of the present application.

Claims 5-9, 17, 18, 26 and 27 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: After an updated search, the prior art cited on attached form PTO-892 is the most relevant prior art known. However, the invention of claims 5-9, 17, 18, 26 and 27 distinguishes over the prior art of record for the following reasons.

Regarding claims 5-9; the claims are allowable over the prior art of record because none of the references either alone or in combination disclose or render obvious a package as defined in claim 5, wherein the support comprises a claim having a clamping face which is parallel to the segment of the length in combination with the limitations of claims 1 and 4, from which claim 5 depends. Claims 6-9 depend from claim 5.

Regarding claims 17 and 18; the claims are allowable over the prior art of record because none of the references either alone or in combination disclose or render obvious a package as defined in claim 17, further comprising a plate disposed within the opening and upon which the segment of the length is attached in combination with the limitations of claim 1, from which claim 17 depends. Claim 18 depends from claim 17.

Regarding claims 26 and 27; the claims are allowable over the prior art of record because none of the references either alone or in combination disclose or render obvious a package as defined in claim 26, wherein securing the length of optical fibers to the package comprises clamping the length between at least two clamping members in combination with the limitations of claims 24 and 25, from which claim 26 depends. Claim 27 depends from claim 26.

Hence, there is no reason or motivation for one of ordinary skill in the art to use the prior art of record to make the invention of claims 5-9, 17, 18, 26 and 27.

Response to Arguments

Applicant's arguments, see pages 7-8, filed March 25, 2004, with respect to the rejection(s) of claim(s) 1-8, 10, 11, 15, 16, 19, 22-29, 32, 33 and 37-39 as being

anticipated by Buckelew et al. (US 6,498,882 B1) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Swirhun et al. (US 5, 631,988) and in view of Trezza (US 6,447,174 B1).

None of the prior art of record discloses, teaches or suggests that the segment of length of optical fibers is disposed within an opening in a sidewall of the package such that a plane defined by the segment is substantially perpendicular to the plane defined by the mounting base, wherein the mounting base is located on the bottom wall of the package and the sidewall is perpendicular to the bottom wall of the package as shown in Figures 6A and 6B of the present application. These limitations, however, are not in the pending claims.

Conclusion

Any inquiry concerning the merits of this communication should be directed to Examiner Michelle R. Connelly-Cushwa at telephone number (571) 272-2345. The examiner can normally be reached 9:00 AM to 7:00 PM, Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B. Bovernick can be reached on (571) 272-2344. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.


Any inquiry of a general or clerical nature should be directed to the Technology Center 2800 receptionist at telephone number (571) 272-1562.

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MRCC

Michelle R. Connelly-Cushwa
Patent Examiner
April 23, 2004


AKM ENAYET ULLAH
PRIMARY EXAMINER